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Changes of address should be communicated only to chapter secretaries. Subscriptions and manuscripts should be sent to the general secretary, Henry B. Ward, Urbana, Illinois.

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SIGMA XI QUARTERLY

EDITORIAL COMMITTEE

Floyd Karker Richtmyer Edwin Emery Slosson
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SIGMA XI IN WAR TIME

The war has placed before Sigma Xi, as it has before every other institution and organization of the country, problems hardly even dreamed of twelve months ago. Never before in history has science been of such life-and-death importance as at the present time. Every science, every scientist, and every scientific organization is called upon to render the maximum possible service in assisting the country in its hour of need. What are the duties of Sigma Xi in this connection?

Obviously no simple, categorical answer is possible. Sigma Xi represents several thousand active scientific workers, each one of whom, as an individual, may be counted on to contribute his just share to the success of our arms, in whatever capacity he may serve. The aggregate of such service will be monumental, but Sigma Xi cannot justly claim credit for such achievements, except in so far as each individual worker exemplifies the fundamental spirit for which Sigma Xi stands. It should be a fitting topic, at least for informal discussion, at the next convention to consider the means by which Sigma Xi, as a Society, representing the highest ideals of Science, can be of service to the government.

At the New York (1916) convention this matter was brought to the attention of the Society by means of an invitation from the National Research Council to coöperate in developing the scientific resources of the country. The Society, at that time, voted to refer the invitation to the Council. The Council considered the matter at its May meeting and recommended that the pages of the QUARTERLY be placed at the disposal of the Council for such use as could be made of the space.

A general discussion, however, by those who have given the matter thought in advance should bring to light many other ways in which Sigma Xi can aid in war time. Here should be a crucial test as to whether our Society can muster a spirit worthy of a nation-wide organization, or whether in the future we must be content to exert an influence of a purely local character in the several institutions of learning at which chapters are located.

Have our several chapters anything in common? If so, we should be able to join together in activities calculated to promote the common good. Have we *really* a national spirit? If so, that spirit, whatever it is, should be brought to the aid of the country. There have been, in the past, criticisms that our conventions do not interest the rank and file of the society because, in the main, they deal with administrative details and problems of organization rather than with the larger questions of scientific interest. In a sense this criticism has been just, but with the rapid growth of the Society there have been many details in imperative need of attention. These have occupied the full time of our two or three conventions. Further, of necessity conventions have been held in the midst of a very busy week. In fact, instead of a matter for criticism, it is rather a tribute to the spirit of loyalty that delegates, attending the Convocation week meetings on their own expense and with many other matters at hand, have made the Sigma Xi conventions so successful in the past.

But here is a question worthy of the best minds in the Society. The discussion of the duties and opportunities before the Society surely forms a common meeting ground for all members and for all chapters. Let the chapters select the best delegates available. Let these delegates individually think over the possibilities before the convention, and make it their duty to attend and contribute to the discussion of this vital subject.

INSIGNIA FOR ASSOCIATE MEMBERSHIP

Even in these times when everything is subordinated to the war, a certain continuity of activities must be maintained. Of necessity, some items of business must come before the Convention. One of these items is the question of insignia for associate members. When the New York Convention passed the amendments to the Constitution creating the new grade of associate membership,

it rejected the proposals to provide insignia for such members, possibly through a misunderstanding as to the real significance of the new grade. In the past year several chapters have, in their By-laws, provided for the election of associate members. There is beginning to be a realization that such members are not on probation in the society. They are elected to membership without any intimation that, should they fail to qualify later for full membership, they may be asked to relinquish their connection with the Society. Associate members are *permanent members* of the Society. In certification of such elections, they are given certificates of membership, differing only in form or wording from those given to regular members. There seems to be no logical reason why associate members should not wear a badge.

In fact, when it is considered that the primary object of associate membership is to encourage the younger students in scientific and technical courses during the critical period in their college work, it becomes necessary, in order to bring about this result, that the newly-elected associate members should wear some distinctive badge in order that they may the more quickly become known to *all* the regular members of his chapter. In our larger universities, it is impossible for *all* the members of one department to become acquainted with *all* the members of another department, even through the medium of Sigma Xi. It is probable therefore, that, without some distinctive badge this primary object of associate membership would be defeated largely through a restriction of the associate's circle of acquaintance in the chapter to members of his own department. He would fail to receive that inspiration which comes from personal contact with prominent investigators in other fields. The wearer of an associate membership badge should and would receive more than casual attention from the older members of the chapter. Should the associate member wear no badge, the chances of his making the acquaintance of regular members after initiation are much diminished.

Of course chapters should, and will, exercise much care in selecting for associate members those who show sufficient potential ability to insure that a large proportion of those so elected will eventually attain full membership. It must be remembered, however, that election to associate membership, at least in the case of undergraduates, will come at a period in the student's course when his life work is by no means decided upon. Many circumstances

may prevent his following a line of work which would lead to the possibilities of full membership. Election to associate membership should mean this and this only: that *at the time of his election*, the candidate *gave promise* of showing proficiency in those lines of work which it is the object of the Society to promote, "and that the Society wishes to encourage him by making possible a more intimate acquaintance with those whose life work is dedicated to science." To imply anything more, to suggest that we do not care to regard him as an *associate* in case he fails to attain full membership, would be to impose upon the new grade of members an obligation absolutely contrary to the spirit of perfect freedom that prevails in scientific circles. To *convince* the associate of our sincerity in this attitude, we should give him a badge, his for all time if he cares to wear it, as a visible sign of at least *latent* scientific ability. Should he attain full membership, he will probably no longer use the associate badge. Sigma Xi has become such a nation-wide organization that wherever the Society means anything at all, the use of the associate badge by those who did not reach full membership cannot possibly be misunderstood provided the new badge is sufficiently distinct from that for regular membership.

The committee, appointed by the Council to introduce this matter into the Pittsburgh Convention will present the designs prepared under the direction of President Howe for use at the New York Convention. This badge comprises a rectangular pin (either 7 x 13 or 8 x 21 millimeters) with the letters $\Sigma \Xi$ in white enamel on a blue background within a gold frame, with space on the back for engraving such items as owner's name, chapter, etc. It is to be hoped that the convention will be able to give this matter careful attention.

UNIFORMITY IN BADGES FOR REGULAR MEMBERS

If the Pittsburgh Convention adopts the associate membership badge, the question of uniformity of badges for regular members will be raised. So long as there was only one grade of membership, it obviously was not a matter of very great importance what particular design of key or pin members wore so long as there was a more or less close approximation to the original design. With, however, a new grade of membership to be represented, it may be desirable, in order that there shall be no possible misunderstanding

as to the grade to which any member belongs, to standardize badges for regular members.

Further, Sigma Xi, to realize its full opportunities must become a society of more than local-chapter influence. We must have a *national* Society in fact as well as in form. To bring this about, not only must we engage in such undertakings as the establishment of Sigma Xi fellowships as proposed by President Stieglitz, or in coöperation with other agencies in assisting in the scientific development of the country as a whole, but we must bring about a spirit of unity by giving attention to the smaller details. It was with this in mind that the council, at its May meeting, appointed a Committee to consider the general question of securing a central agency to supply keys to the several chapters, either directly or through the National Society. This committee will study the present variations in styles of keys, sources of supply, etc. and, will then make such recommendations to the Council as the investigation may seem to warrant, provided the several chapters are willing to coöperate. Incidentally, it should be possible to supply standard keys in quantity at a material reduction in cost.

Coincident with this question, might be considered the question of a uniform stationery both for local and for inter-chapter correspondence. The committee would be materially assisted in its work by an informal discussion of such questions at the convention.

In the discussion of this and allied subjects, due recognition must be given to the fact that there have been in the past, and must be in the future many differences among the several chapters, due largely to variation in local conditions under which chapters exist, and to chapter traditions which have become fixed by virtue of such conditions. Thus one chapter may wish to elect to full membership mainly undergraduates, because Sigma Xi in that chapter has developed in such a way as to be synonymous with the highest achievement in undergraduate circles, while another chapter, with a strong graduate school, may find that it can best uphold the ideals of the Society by electing graduates only. One chapter may make a strong point of its social activities. Another may find formal lectures best suited to its purpose. The women of New York State may vote, but those just across the line, in Pennsylvania, may not. Yet all the people of both states use the same postage stamps and swear allegiance to the same flag. There will always be opportunity for chapters to exercise "Chapter Rights," some of which however

may have to be modified if Sigma Xi is to build a really effective national organization upon the common ground of things of interest to us all.

THE QUARTERLY

Time did not permit a free discussion of the question raised at the last convention in regard to the continuation of the *QUARTERLY*. The matter was referred to the Council which has already reported its action. This important matter may come up at the Pittsburgh Convention, and if so, delegates should be prepared to discuss it not so much from the standpoint of past performance but in view of future possibilities. If Sigma Xi is to develop into a real national organization it is absolutely necessary that there be some medium of inter-chapter communication other than that provided by the brief annual conventions. The *QUARTERLY* further, furnishes the best possible medium through which to interest our very large proportion of Alumni Membership, and thereby, in assisting in carrying out the proposals of President Stieglitz to establish Sigma Xi fellowships, supported in part by contributions from Alumni members. Is it fair to limit active participation in Sigma Xi to those who *by chance* happen to live in universities where there are chapters, and practically, thereby to cut off all other members from Society activities? As has been pointed out in these pages, such a policy is a deliberate neglect of our available resources.

The development of industrial research, which surely comes within the scope of "Science, pure and applied" has raised a problem which the writer believes to be of fundamental importance, and which has never even been considered by the Society. Except in so far as each chapter makes an attempt to keep in touch with such of its Alumni Members as happen to engage in industrial research (the number of chapters which keep in communication with their non-resident members is *very* small) there is no way at present, save by means of the *QUARTERLY*, to develop any extra-chapter interest in any policy of expansion. And yet many of these non-resident alumni members are not only intensely interested in scientific work in general, but are in a position to render very great assistance in any undertaking in which the Society may engage.

The *QUARTERLY* must be what the individual members of the Society make it. If it is to succeed, if indeed there is to be an inter-chapter spirit which will make activities of national scope pos-

sible, the journal must be supported by more than a mere handful of members. A free discussion at the convention, giving the editorial board clearer ideas of the kind of journal which the members wish to support would materially assist in developing the *QUARTERLY* along those lines in which it can be of most use.

Of course, it is difficult, if not impossible to do very much in the way of development in these times of war, except in so far as service to the war is necessary. The most that can be done is to maintain our facilities intact, ready for instant expansion to meet obligations, as yet unknown, after the war is over.

From this standpoint, even if, after discussion, it should be deemed unwise for Sigma Xi to take a more active part in war work of a scientific nature, the coming convention should be one of the most important which the Society has ever held.

F. K. R.

FROM THE OTHER SIDE OF THE BARRICADE

BY EDWIN E. SLOSSON

Formerly Professor of Chemistry in the University of Wyoming
Now Literary Editor of *The Independent*

When Clemenceau, now Premier of France, was a young man he was a radical and a revolutionist, always "agin the gov'munt" and frequently stirring up disorder. When he first became premier the syndicalists thought they could do whatever they pleased so they declared a general strike and tried to tie up every railroad in the country. But Clemenceau put down disorder with an iron hand and kept the trains running in spite of everything. His early associates were shocked at this and one of them came to remonstrate with him and sought to confound him by quoting from some of his youthful speeches in defense of the right of revolution. Clemenceau heard him patiently and then replied: "*Mais, mon ami*, you do not understand. I am the same man I always was but now I am on the other side of the barricade."

When I was teaching chemistry a dozen years ago I thought as science professors generally do that editors were idiots. I was eloquent in my denunciation of the asininity of the so-called scientific articles that appeared in the popular press and my favorite amusement was to take a newspaper or a highly respected magazine before my class and have the Freshmen point out how ridiculous were the statements in its account of some alleged discovery, how much of it was false and how much of it was old.

But when I was called from the chemistry chair to the editorial chair I experienced a sudden change of heart or rather a change of attitude. My predecessor in the editorial office, one of the foremost literary men in America, and formerly a college professor, said to me as his parting advice: "Do not order anything from a college professor if you can help it. They never send you what you want and they never send it on time." I thought him prejudiced and I presume he was—but I have found out that he had reason to be prejudiced. I did not take his advice—but I have often wished I had. Nowadays when I meet my brother editors we commiserate ourselves over the impossibility of getting readable and reliable stuff on scientific subjects and we hold up to ridicule the article which some distinguished specialist expects us to publish. Writers swarm into

our offices, male and female, aged sixteen to seventy, willing and anxious to give us stuff on chamber music, military science, Gothic architecture, Japanese prints, Cretan archeology, Russian linguistics, ceramics, finance, housing, etc. Some of these writers are competent to treat such technical subjects in a way to interest and instruct the average reader. But if we want something on sound in the style of Tyndall, something on insects in the style of Fabre, something on chemistry in the style of Duncan, something on geology in the style of Shaler, something on earthworms in the style of Darwin, something on diatoms in the style of Haeckel, we have to go after them and then generally fail to get them. We are not after great men for, to be frank about it, the name of no man of science carries much weight on the cover of a magazine. One of the most popular newspapers of the country publishes its scientific articles under a pseudonym. We do not care in this case to get at the man "higher up." The man lower down will suit us if he knows how to read scientific literature and how to write popular literature. Our colleges and universities are turning thousands of young men and women out who are or should be trained in both these arts. Where are they? And why do they object to earning a little money in their leisure hours? They are not all capable of doing original research. They are not all busy in technical work. They are, many of them, just the sort of people who should serve as the interpreters of science, the missionaries of the movement, the middlemen of the business, the conduit from the source to the street.

Every few weeks the editor or the publisher drops into my office and says: "See here, Slosson, we haven't had any popular science articles in a long time. The last numbers have been poorly balanced. There must be lots of good material coming out now. Can't you rustle up some of it?" And I smile encouragingly and say: "Yes, there is lots of it. I'll see if I can't get something." But when he goes out and I tell over on my fingers—of one hand—the names of those I can call on my heart fails me. There is Prof. A.—one of the most interesting talkers I ever heard, one of the most uninteresting writers I ever read—I'm afraid he is mad because after I had begged him to write up some recent researches in his field of great popular importance, I sent back his manuscript twice to be rewritten because the principal words he used were not defined in the dictionary—nor in the article. Then there's Mr. B.—a scientific

sophomore in the University of Atlantis, a bright chap with a knack of putting things, but he made a bad break in his last contribution which called out some sarcastic letters—the sort I used to write to editors. And there are others, graduate students, assistants, teachers, men who stand at the very frontier of human knowledge, familiar with sources, knowing real science from fake science, eager and able to write but when they come to me or I get after them they ask helplessly: "What do you want me to write about?"

I count ten before I answer. Then in as calm a tone and polite a manner as I can at the moment assume, I say that since they are more conversant with the latest advances in their respective fields than I could be perhaps they might suggest some topics, a dozen or so, that might be worked up into a good news story.

What do they take an editor for anyway? If I knew what they know I should not ask them to write. I should do it myself. Do they think that our correspondent somewhere in France cables to us: "Come over and tell me what there is here to write about?" Do they think that our musical critic drops in to ask: "Have I heard any new composers recently whom you think I ought to write about and if so what should I say about them?" Did Columbus go to King Ferdinand and inquire: "Has Your Majesty anything in the seafaring line that you would like to have me do?"

When I was a chicken I had to scratch gravel for my grub. Wyoming was not the best place in the world for one afflicted with the *coethes scribendi*. The library contained about three thousand volumes largely Pub. Docs. But late in the afternoon after I had run off the last of my analyses and dismissed the lingerers from the laboratory, I used to lock my basement door and slip upstairs to the library to see what I could find to write about. I could always find something. Once I thought I would have to give it up. I looked over the latest periodicals, which were put on the radiator for convenience, and the only new thing I could find was a copy of a government meteorological monthly, mostly tables, but in one corner I discovered an item about a new record of a *ballon-sonde*. With that as a clew I wrote eight hundred words on "The Exploration of the Upper Atmosphere" for which *The Independent* sent me eight dollars and it was welcome in those days.

One day I saw in the paper that a Nobel prize had been awarded to Sully-Prudhomme. I had never heard of the gentleman and I

ransacked the library with little success. Two incidental references were all I could unearth but by raiding the French classroom in the absence of the professor I got a little book on French verse by Arthur Canfield with one or two of his poems. This gave me material enough for a four page article on "The Poet of Science" and it was not so bad as you would think. That was twenty years ago, but a professor of French literature whom I met the other day complimented me on it.

These personal reminiscences are merely introduced to explain why I lose my temper when somebody within five cents of two of the largest libraries in the country tells me he cannot find anything to write about. I feel like saying to him as was said to the sailors on the ship in the mouth of the Amazon who signaled to a passing vessel for fresh water: "Scoop it up. It is all around you." I would remind them of Chesterton's remark: "There are no uninteresting subjects, there are only uninterested persons."

Which side of the barricade I am on does not matter to anybody. What does matter is that the barricade is there. With more science taught than ever before, with science making more spectacular progress than ever before, with science coming more closely in touch with daily life than ever before, there is, I veritably believe, less interest taken in it by the intelligent cultured layman than there used to be. Science has won its way into the schools. It has yet to win its way into the hearts of the people. It is not complimentary to science that closer acquaintance with it should lead to dislike of it. There is for one thing an active and organized opposition to the propaganda of science, which has been intensified by the reactionary spirit always engendered by war. All the crimes of Germany are charged to her scientific training. This is rather amusing in view of the criticism of German schools by German scientists for being too classical. See, for instance, Ostwald's *Ueber die Schulelend* or "What's the matter with our schools?" In England the headmasters are urging that the study of the classics is the best way to support the monarchy for they prove the inevitable failure of democracy. In this country the mere proposal to found a modern school to see if there cannot be found some other way of attaining the cultural aims of classical education brings a mass meeting at Princeton to counteract the movement. Everywhere we hear demands for a return to the "humanities" meaning mostly by that an intensive

study of the atrocities committed during the Trojan and Peloponnesian wars.

The antagonists of science do not question the achievements of applied science, they do not object to the pursuit of pure science, they do not deny the practical advantages of elementary scientific education. What they do question is the esthetic, intellectual, and moral benefits of scientific training; that it can stimulate the imagination, broaden the sympathies, clarify the mind and elevate the character. In short they challenge the cultural value of science. Music, we know, has a value to those who are not musicians, architecture to those who are not architects, poetry to those who are not poets, history to those who are not historians, classical literature to those who are not classical professors. Has science any such value to those who are not its professional practitioners? That is what was to be demonstrated and has not yet been demonstrated to the satisfaction of the world at large. It must be admitted that some of those who have taken scientific courses with A grades do not show in their character and mental attitude any evidence of beneficial effects from the information acquired. It is of course admitted on the other side that some classical students never get an inkling of the cultural value of their studies, tho if I ventured to give any figures as to the percentage I should get into trouble.

But however we may think the two types of studies compare in regard to intrinsic and possible cultural influence it must be acknowledged that classical and literary studies are more commonly taught with a view of exerting such influence while this side of the science is frequently ignored in the classroom and unappreciated by the world outside.

It may be said that the commonly professed admiration of fine arts, music, literature, and the like is largely a fashionable affectation. That is likely true but the mere existence of hypocritical interest proves that there are a certain number of respected people who have a non-professional interest in and get a genuine benefit from such pursuits. That there is no similar social pressure imposing an affection of admiration for science proves that there is no considerable body of laymen who take that sort of an interest in science. There are doubtless many people who have never enjoyed a symphony or have never been thrilled by "a chorus ending from Euripides." But those who have not, feel a certain misgiving and

reluctance about admitting their incapacity to appreciate such things even tho they may in bravado profess disdain of them.

On the other hand those who have never felt the delight of the solution of a scientific problem or experienced a moral elevation at "the contemplation of the starry heavens" have no sense of secret shame but are more apt to boast of their ignorance and incapacity. Witness the contempt manifested by the classicists "for the modern side" as given in Kipling's school stories. It is even possible to discern distinctions in the honorific rank of the several sciences, dependent, as in the case of aristocratic families, chiefly upon their ages. Astronomy, for instance, claiming a respectable antiquity of some six thousand years and having received the commendation of such well-known literary men as David, Kant, and Addison, is not to be sneezed at as chemistry is. Yet the contemplation of the electronic systems within the atom is quite as awe-inspiring and gives one the same sense of moral elevation as may be derived from an appreciation of the magnitude of the starry heavens. Of course astronomy, being in its higher branches a useless study, has thereby a better claim to honorific rank with those who admire only the sciences that belong to the leisure class and do not have to work for a living. Mathematics, almost as old as astronomy and also largely cultivated from non-utilitarian motives, is held in higher esteem than such parvenu and practical sciences as botany and zoology.

But the strange thing is that science has lost its established position as a part of conventional culture very recently, even during the last fifty years in which scientific progress has been unprecedented and scientific education has become universal. It is as if when the whole population had been taught to read, reading should go out of fashion. A gentleman and scholar in ancient Athens regarded it as his duty to know what science there was to know. He might despise Phidias but he would admire Archimedes. Virgil used his art to teach agriculture and Lucretius used his to teach physics. Napoleon delighted in attending the seances of the Academy of Sciences and Frederick the Great was as fond of scientists as he was of poets. Statesmen of the old school such as Jefferson and Franklin took a personal interest in the advancement of science.

In my office there stand the bookshelves holding the files of *The Independent* and *Harper's Weekly* stretching back for more than half a century. One was started as a religious and the other as a

political journal. But when I take down one of the cumbrous volumes and turn over its yellow pages I see that both give a definite and considerable space to scientific news, evidently because in that day all persons of any pretensions to culture regarded as their duty and privilege to keep informed of the progress of science as they did of arts, politics, religion, and literature. Lectures at which were demonstrated the wonders of oxygen or the magnetic telegraph were reported with the same enthusiasm as a concert or ball and evidently attracted audiences as large and fashionable. Look in the old *Scribner's* or *Harper's* monthlies and you will see a department of science and invention. These are not to be found as a regular feature in such weeklies and monthlies today and altho scientific articles do occasionally appear they do not take so much proportionate space nor cover the ground so systematically as used to be the case. There is little effort made to interest the public in science nowadays. We have many scientific periodicals, both technical and popular, but they do not reach the same readers. Consequently our people are divided into two sections, reading different things, speaking different languages, thinking different thoughts.

In short, there is a barricade.

SIGMA XI QUARTERLY

G. A. MILLER

The SIGMA XI QUARTERLY was started as an experiment about five years ago, the first number having been issued in March, 1913. The Society at first guaranteed the expense of the publication for only one year. The fact that the financial support has been continued during a period of four or five years without much opposition does not prove conclusively that the majority of the members of the Society are in favor of a regular official publication. Some of those who may have had little confidence in the usefulness of such an organ were nevertheless willing to give it a liberal trial, especially since the additional expense thus entailed was slight.

That the Society of the Sigma Xi can live and prosper without a regular publication seems to have been proved by the first quarter century of its history. Hence the question of the continuance or the discontinuance of its QUARTERLY does not appear to be a question of life or death for the Society. It is, however, a question of great importance, and it seems fortunate that this question has come squarely before our entire membership. If the SIGMA XI QUARTERLY does not serve the Society and the cause for which the Society stands commensurately with the expense involved it ought to be either changed or discontinued as soon as possible.

It is true that "the Sigma Xi as a national organization is not seeking to advance a specific line of investigation as most scientific societies are" but evidently this does not prove that it, "as constituted has no propaganda or mission that justifies a journal." Our National Academy of Sciences is "not seeking to advance a specific line of investigation" but saw fit to inaugurate a regular journal, viz., *Proceedings of the National Academy of Sciences*, after more than fifty years had elapsed since its organization. In recent decades there has been a growing tendency to organize research separately in various subjects in the form of national societies named after these subjects, and there are those who believe that these organizations have attained such a preponderant influence as to threaten the very life of general research organizations as serious factors in our scientific development.

On the other hand, there are also those who believe that it is a matter of the greatest importance to maintain common scientific

life in order to secure unity and helpful interactions, and to avoid scientific estrangement and mistrust. The history of science has taught us that some subjects which were apparently far apart and which were developed separately for a long time were later seen to have important elements in common. The discovery of these common elements and their development has led to marked advances in the separate fields themselves. By way of illustration we may refer to the fields of algebra and geometry so happily welded by the work of Descartes, Fermat, and others.

Why does a national organization which is "seeking to advance a specific line of investigation" need a special journal? One obvious reason is that such a journal promotes coordination of the scientific efforts of investigators who are widely separated, and tends to elevate standards by enabling all workers in the same field to profit by the most recent fruitful developments. The prompt publication of important results which these journals make possible serves as an inspiration to their discoverers and as a protection against useless duplication of efforts on the part of other investigators in the same field.

Fundamentally there is not much difference between these reasons underlying the publication of a regular periodical by a society which aims to advance a specific line of investigation and by one which, like the Sigma Xi, aims to promote the interests of scientific investigation in general. The fact that the Sigma Xi aims to create high ideals and to reach the investigator very early in his career makes its task the more serious and calls for all the wisdom that can be secured by means of united efforts. The administration of the local affairs of a chapter, especially as regards elections, is beset with such great temptations to lower standards that it seems especially desirable to have all the support which publicity and the strict adherence to high standards in leading centers can supply.

Those who have been members of boards of electors realize that the work which the Society of the Sigma Xi aims to do is not sufficiently understood by a considerable part of the membership. Moreover, if the work of the board of electors is poorly done more harm than good is apt to result therefrom. To secure a proper atmosphere for efficient work on the part of a chapter of the Sigma Xi it is usually necessary to overcome some opposition on the part of those who fail to take seriously the great difference between the

functions of the Sigma Xi and those of an ordinary science club. The members of the latter are companions in research while those of the former are companions in zealous research with emphasis on the word zealous.

This word zealous is making the trouble and causing friction unless a healthy atmosphere has been created. It leads to the choosing of one out of many when we would naturally prefer to say that all who will may come. It leads us to scrutinize the scientific work of our colleagues and to pronounce judgment on it when we would naturally prefer to overlook scientific shortcomings in view of the admirable qualities or services of great importance along non-investigational lines. It leads us to long for such help as an official organ can supply while the science club may not feel the need of such outside support in the administration of its affairs.

It is doubtless true that many of us have found that "comparatively little matter vital to the chapters or to the membership is conveyed by the *QUARTERLY*." Some of us had hoped that it would be possible to find regularly therein brief reports of important scientific discoveries presented before the various chapters. Some of us take little interest in the necessary machinery for running a scientific organization, being interested only in its product. Some of us have doubtless found for this reason national conventions unattractive, and that our interest in the "dinners" almost vanishes with the serving of the last course by the waiters.

Much of this can be explained by the fact that we are so apt to become merely companions in research instead of companions in zealous research. The strenuous life demanded of the latter requires an interest in the machinery as well as in the product. In the case of the Society of the Sigma Xi the machinery is, according to its constitution, unusually difficult to handle and the editors of the *QUARTERLY* have naturally paid much attention to it in view of its fundamental position in the organization.

It should be remembered that the *QUARTERLY* has thus far been conducted on a very economical scale. We should not expect to find in a periodical costing us only about twenty cents per annum as much vital matter as in one costing from ten to fifty times as much, as is the case with regard to our research journals devoted to special subjects. Moreover, our support of the *QUARTERLY* should not be determined solely by our interest in its contents. The ques-

tion is a much broader one and includes the consideration of the influence this periodical has had on raising standards of the various chapters and on higher research ideals in various universities. In these days of severe national trial we should be especially interested in the diffusion of high ideals with respect to one of the greatest sources of national strength, viz., the scientific research relating to the discovery of causes without which nations otherwise nobly endowed may be swept away by a ruthless enemy.

Local addresses which might properly be disseminated among our general membership by means of an official publication are not necessarily better or worse than those which have "a ready avenue of publication in one of the many reputable and well-established technical journals." The former should be of peculiar interest to members of our organization not on account of their general scientific interest but because they relate peculiarly to the special mission of our Society. The question whether this special mission is a wise one is not under consideration here. It is a mission which we are pledged to support and which has brought to some of us duties which we assumed with reluctance and perhaps with misgivings as regards our own interests.

The various chapters with which I happened to have been connected have also "taken pride in trying to accomplish something worth while on a minimum of expense." It seems to me that the *QUARTERLY* has thus far been conducted along the same line. Possibly many of our chapters might be regarded as types of research experiment stations with respect to getting a large scientific return for a small financial outlay. "The purely business part of our transactions and minor notices can be well taken care of, as formerly, by leaflets issued preceding and following the annual convention." As I understand it each member might thus be saved an annual expense item of from ten to fifteen cents—an item worth noting to be sure but one which many of us would be glad to sacrifice for a propaganda looking towards greater uniformity and towards the uplifting and maintenance of higher standards in various chapters.

That the publication of the main evidences on which elections, especially faculty elections, were based tends towards higher standards seems to require no argument. It is true that these evidences furnish in the main uninteresting reading matter, but they constitute

a public record of those admitted to become our companions in zealous research and we should be interested in such companions even if we do not expect to become personally acquainted with them. If our interest in them does not extend to the total of ten or fifteen cents per annum we might possibly be willing to invest this amount in such records with a view to future reference.

I do not know that the *QUARTERLY* was ever "padded into a journal" or that matter was "introduced which is not only useless, but beneath the plane of the organization." All the journals which I receive contain articles which I do not take time to read, but I do not attribute this to padding. Many new members come into our Society from year to year and they are naturally interested in matters that some of us who have been in the Society for a long time would not take time to read. Our unique mission and large membership seem to me to warrant an official publication if we are really in earnest about upholding the principles of the Society of the Sigma Xi, which seems to have taken permanent roots in our scientific life and must not be allowed to degenerate into a scientific farce.

The life, death, or reform of the official organ is, however, properly a matter for the entire membership to decide. Forced feeding may sometimes be justifiable but this force should not be wielded by a few enthusiasts without authority. The Society is greatly indebted to those who have so freely given time and thought to the organization and maintenance of the *QUARTERLY* during five years. If the experiment has not led to the results that were expected there seem to be good reasons for believing it has been worth while. Those of us whose indifference and failure to render requested assistance have thus far prevented the full realization of the plans made for the *QUARTERLY* feel like thanking its promoters for having held a higher opinion of us than we deserved.

EARLY HISTORY OF SIGMA XI

In estimating the extent of progress of Sigma Xi from the time of its founding in 1886 to the present, much is to be gained by a careful study of the early history of the Society, particularly during the period of its inception. The *QUARTER CENTURY RECORD AND HISTORY* contains an extended account of this early period, but the following very interesting extract from a letter written in May, 1917, by Wm. H. Riley, of the class of 1886, Cornell University, and one of the founders and charter members of the Alpha Chapter, gives some hitherto unpublished information:

"You asked me to tell you about Sigma Xi. Well it has been so long ago that I have forgotten most of the details but I will tell you as much as I can remember. During my last three years in Cornell, I ate with a bunch of boys who were mostly art students and most of them very good students. Every spring, some of these boys won their Phi Beta Kappa keys and of course these were the occasions of congratulations and discussions. In the spring of 1886 two of my best friends received their keys, which started me to thinking that there should be some such honor bestowed on the scientific students who had done good work. I discussed the question with W. A. Day, my chum, an engineering student, and we grew very enthusiastic over it. At this time there was an instructor in Sibley College, Mr. Frank Van Vleck, with whom we were very intimate. He was a graduate of Stevens Institute and was brought to Cornell by Dr. Thurston when he came from Stevens. We mentioned the subject to Mr. Van Vleck one evening while sitting under the trees on the corner of Factory (now Stewart) Avenue and State Street, in front of our boarding house; he was much taken with the scheme and thought it should be worked up immediately. This was about the first of May. From that time until commencement we often held meetings, the three of us, under the trees or walking down town. Mr. Van Vleck consulted the faculty and Mr. Day, myself, and the boys. Everybody thought it was a good scheme, but as graduation was so near we could not get them aroused. The week before commencement we had a meeting and decided to stay a while after the close of college and work the matter up, but I was called home directly after commencement. Mr. Day and Van Vleck stayed until they had everything planned out. We had considerable correspondence during the summer but it has all been mislaid. Mr.

Van Vleck presented his scheme in the fall of 1886 and a society was formed. This is all I know about Sigma Xi."

In view of the interest which attaches to personal accounts of this kind, might it not be advisable to take some steps to secure more of such information from all of those who were instrumental in establishing the Society.

AN APPEAL FOR DATA

The preceding, very interesting note furnished by one of our enthusiastic members who recognized the value of such a personal record of the early days, suggests how little we really know of the details of the movement that led to the organization of the Sigma Xi Society. The few men who among the founders have written of those times in which the plan was being worked out, have in their accounts sketched the events only in bold outline and our minds ask naturally that the rest of the picture be filled in. The *QUARTER CENTURY RECORD AND HISTORY* includes in the section on the foundation of the order all that could then be ascertained, but many gaps appear in the record. There must be further interesting details if only they could be dug up. Here is a field in which volunteer assistance is much needed, for numbers will spell success.

It is now thirty two years since the movement was inaugurated and thirty one since Sigma Xi was actually founded. The men who were then college boys have all of them passed the crest of the hill and are now sedate men of affairs. No doubt they have forgotten much of college days but our discussion and appeals for help may open the old choked up channels of memory and permit some recollections of those days of planning to filter thru. Old college scrap books may disclose programs of meetings, announcements of conferences or initiations, or records clipped from college papers that will throw new light on the dim twilight of the dawn of Sigma Xi.

We should not forget that among the intimates and associates of the founders were no doubt those who knew of the movement tho they were not within the circle because their work lay in other fields of university activity. Such men could contribute much to our information of those times if we could ascertain who they were and could refresh the memories that years have rendered vague and shadowy. So far as printed records go no associate of the group

that organized Sigma Xi has given form to any impressions these men made upon their fellows in the university by reason of the vision they had. It may well have been that the idea appeared to outsiders then too trivial or too doubtful in real value as it must have seemed too unlikely to succeed to justify serious attention; and so all outside impressions of the period have vanished in so far at least as they concern the conception and birth of the new organization. It should be remembered that of the four chapters known to have been established in the year after the society was founded at Cornell two died almost at birth, and there seem to have been other chapters that were still born and never won a name or place in history. Yet despite this lack of outlook for the future someone may still have played the part of Boswell for the farsighted Dr. Johnsons of the Sigma Xi circle and be even now waiting for the right appeal to bring out his stories of the founders and the things they did to make Sigma Xi a reality. Will not every one who stands in personal touch with any early member of Sigma Xi or with any Cornell man of the years in which our organization was conceived and brought forth, join in the effort to secure some further data on the men concerned, the work they did, and the impressions they and their work left on those with whom they were associated.

The appeal is for immediate action; the need is urgent. Already some of those men have gone from us and before many years have passed it will be impossible to secure what may now be available for the mere asking. This appeal goes out first of all to Cornell men of 1885, 1886, and 1887, and to their friends and associates then and today who have an interest in Sigma Xi. It goes also to the students and faculty at the Rensselaer Polytechnic Institute (Troy) and at Union College where in 1887 the second and fourth chapters were established and where men must have been closely in touch with the founders in the parent Cornell chapter.

Incidentally in closing attention may be directed to the fact that no one has yet written even a sketch of the two defunct chapters at Rutgers and Stevens Institute concerning which there is known to have been extensive correspondence. Some of it may yet be in existence that will reflect an interesting light on the aims and ideals of the men who were seeking to draw others under the influence of the new organization for mutual benefit. Last of all there still remains the riddle of the missing chapter letters. Who were the men or colleges to which the missing Gamma, Epsilon, and Eta has been assigned?

FROM THE WISCONSIN CHAPTER

Madison, Wisconsin,

November 14, 1917

At the last convention of the Society of Sigma Xi held in New York City, December 27, 1916, Columbia Chapter introduced a motion to discontinue publication of the *QUARTERLY*. See page 27, March issue of *SIGMA XI QUARTERLY*. The Wisconsin chapter believes this matter is of sufficient importance to justify its thorough discussion by each local chapter. We are opposed to the *QUARTERLY* for the following reasons.

1. Sigma Xi, as a national organization, is not seeking to advance a specific line of investigation, as most scientific societies are, and, as constituted, has no propaganda or mission that justifies a journal.

2. Comparatively little matter vital to the chapters or to the membership is conveyed by the *QUARTERLY*, and when this is padded into a journal, matter is introduced which is not only useless, but beneath the plane of the organization.

3. The *QUARTERLY* is seldom read by our local membership, which is evidence that it does not convey to them useful or vital information.

4. Any local address worthy of dissemination among our general membership has a ready avenue of publication in one of the many reputable and well established technical journals.

5. Financial Tax. We have taken pride in trying to accomplish something worth while on a minimum of expense. Our local dues for many years have been \$1. Why spend nearly 50% of our income for something which does not stimulate and promote? To raise our dues would be a deterrent.

6. The purely business part of our transactions and minor notices can be well taken care of, as formerly, by leaflets issued preceding and following the annual convention.

Finally, we maintain that the efforts necessary to continue the *QUARTERLY* are out of proportion to any benefits derived from it. We urge that your chapter fully discuss this matter, and instruct your delegate previous to the convention.

C. I. CORP, *Secretary*.

CHAPTER REPORTS

THE MISSOURI CHAPTER

1. The year 1916-1917 was a most successful one for this chapter. Seventy-seven members were on the chapter roll during the year. Nine meetings were held during the year, six of which were strictly scientific in nature. Two social meetings were held, the first being an informal dinner on October 20, 1916, which was enjoyed by forty-two of the members, and the second the annual initiation meeting on May 11, 1917. The annual business meeting on April 20, 1917, at which the new members given below were elected, was an important one for the chapter. Extensive revisions in the By-laws of the chapter were made which will greatly facilitate the transaction of business in the future. The most important business which came before the chapter during the year was the adoption of the provision for the election of associate members. The proposition brought forth considerable discussion particularly because the chapter voted in 1914 to discontinue the election of undergraduates. The By-laws providing for associate members were finally adopted, however, at a business meeting held immediately following the annual initiation on May 11, 1917. The large majority of the chapter which is in favor of this new class of membership indicates that it will receive an enthusiastic trial during the present year.

The scientific meetings held by the chapter during the year were as follows:

November 15, 1916, The Ideals of the Scientist, public lecture by Professor John M. Coulter, of the University of Chicago. November 16, Inheritance and Response, address before the chapter by Professor John M. Coulter of the University of Chicago. December 15, 1916, The Absorption and Utilization of Organic Carbon by Green Plants, address before the chapter by Professor Lewis Knudson of Cornell University, a former member of Missouri chapter who was spending the semester at the University of Missouri. February 10, 1917, Recent Studies on the Physiology of the Stomach, public lecture, which was illustrated by lantern slides by Professor A. J. Carlson of the University of Chicago.

At a scientific meeting of the chapter, March 16, 1917, the following papers were presented: Barite Deposits of Missouri by W. A. Tarr, Ph.D., Assistant Professor of Geology, University

of Missouri; The Meat Proteins, by P. F. Trowbridge, Ph.D., Professor of Agricultural Chemistry, University of Missouri; Some Effects of Quarter Century Cropping on Soil, by M. F. Miller, Professor of Soils, University of Missouri; Adaptation of Aquatic Insects, by G. S. Dodds, Ph.D., Assistant Professor of Zoology, University of Missouri.

At a scientific meeting of the chapter, May 18, 1917, the following papers were presented: Animal and Plant Carotinoids by L. S. Palmer, Ph.D., Assistant Professor of Dairy Chemistry, University of Missouri. Hessian Fly Investigations by Leonard Haseman Ph.D., Associate Professor of Entomology, University of Missouri. Experiments in Human Over-Nutrition, by Addison Gulick, Assistant Professor of Physiology, University of Missouri.

The new members of the chapter were elected on April 20, 1917, and the basis of the election in each case, is given below:

FACULTY

JOHN WESLEY MARDEN, B.S., M.S., D.Sc.

Assistant Professor Chemistry

A Study of the Methods for Extraction by Means of Immiscible Solvents from the Point of View of the Distribution Coefficients. *Journal of Industrial and Engineering Chemistry*, 6, 315 (1914); 6, 928 (1914).

GRADUATE STUDENTS

SAM TILDEN BRATTON, B.S. in Ed.

Geology

Some Geographical Influences in Location of Type Railroads in Missouri, thesis for A.M.

EDITH ELEANOR CUMMINGS, A.B.

Astronomy

Eclipsing Binary TV Cassiopeiae, thesis for A.M.

LEON CHAPMAN DENNIS, B.S.

Horticulture

Winter Structure and Development of Apple Buds, thesis for A.M.

ALBERT HAROLD HOLLINGER, B.S.

Entomology

Scale Insects of Missouri, thesis for A.M.

WILLIAM POLK JESSE, M.E., A.B.

Physics

The Effect of Density on the Refractive Indices of Gases, thesis for A.M.

WARD WESLEY KELLEY, A.B.

Geology

The Determination of the Rate of Motion of Water and Oil Through Various Kinds of Rocks, thesis for A.M.

WARD HANSON SACHS, B.S.

Agronomy

Effect of Oxidation of Sulphur in Soils on the Solubility of Phosphorus, thesis for A.M.

LEWIS FRANCIS THOMAS, B.S.

Geology

The Geography of Greene County, Missouri, thesis for A.M.

WALTER EUGENE THRUN, A.B., A.M.

Agricultural Chemistry

Determination of Various Forms of Nitrogen in Bovine Flesh, Including Products of Hydrolysis of Some of the Proteins, thesis for Ph.D.

LEON WALTON WING, JR., B.S. in Agr.

Dairying

Milk Substitutes for Calf Raising, thesis for A.M.

LEROY S. PALMER, *Secretary*.

THE SYRACUSE CHAPTER

During the academic year 1916-17, eight meetings were held, five of which were regular meetings both for business and the presentation of papers; the rest were scientific only, at which addresses were given to the public. The list of meetings with papers and dates is as follows:

October 26, 1916, regular meeting, report by Prof. T. C. Hopkins and Dr. B. W. Clark, on A Geological Trip in the Rockies.

November 24, 1916; open meeting, lecture by Prof. C. W. Hargitt, Health and Disease in Terms of Biology.

December 1, 1916, open meeting, lecture by Prof. John C. Adendorff of the L. C. Smith College of Applied Science, Diamond Mining in South Africa.

December 8, 1916, regular meeting, report by Dr. J. M. Johlin on the New York Meeting of the American Chemical Society, also on The National Exposition of Chemical Industries; also a report by Prof. E. N. Pattee on Some Important Problems in Industrial Chemistry.

December 15, 1916, open meeting, conjointly with the Syracuse Section of the American Chemical Society, lecture by H. E. Howe on The Development of the Chemical Industries of the Canadian Northwest.

February 9, 1917, regular meeting, report by Dr. H. S. Steensland, Dr. H. G. Weiskotten and Dr. R. K. Brewer, on The Action of Benzol on Animals.

March 23, 1917, regular meeting, report by Dr. O. W. H. Mitchell on The Work of the Bacteriological Laboratory of the City of Syracuse on Pneumonia and Diphtheria Organisms; also Studies on the Growth of White Pine, by Dr. H. P. Brown; also Geostatic Studies on Root Growth, by Dr. L. C. Petry.

May 11, 1917, regular meeting, annual election of officers, annual reports of officers, research reports by members elected during the year.

During the year, one member of the faculty affiliated with the chapter, and three members of the faculty and five graduate students were elected and initiated as follows:

AFFILIATED

CHARLES L. BRIGHTMAN, Ph.D.

Instructor in Physics

Affiliated from Clark University Chapter.

FACULTY

JOHN LEWIS JONES, Ph.D. (Yale, 1911)

Instructor in Mathematics

The Number Concept, Thesis for Ph.D.

CARL DOWNEY LARUE, A.B. (Michigan, 1914)

Instructor in Botany

Matroclinic Inheritance in Mutation Crosses of *Oenothera Reynoldsii*, joint authorship with H. H. Bartlett, Am. Jour. Botany, Vol. IV, No. 3 and other papers.

WALTER ALBERT PATRICK, Ph.D. (Goettingen, 1914)

Instructor in Chemistry

Electrical Conductivity of Alcoholic Iodine Solutions, and Solutions of Platinum Iodide, Jour. Am. Chem. Soc. and other papers.

GRADUATE STUDENTS

ALEXANDER JESSE MACNAB, B.S. (Syracuse, 1916)

Forest Entomology

A Study of the Insects Attacking the White Pine, thesis for M.F.

ANNE E. McKECHNIE, A.B. (Western College for Women, 1914)

Zoology

The Taxonomic Values of Nematocysts in Coelenterata, thesis for A.M.

JAMES RODENBERG SLATER, B.Litt. (Rutgers, 1913)

Zoology

The Urodeles of Onondaga County, New York, thesis for A.M.

HARRY HUTCHINSON STAGE, B.S. (Syracuse, 1916)

Entomology

A Study of the Insect Fauna of the American Larch, thesis for M.S.

EDWIN SANDERS VANDEUSEN, A.B. (Syracuse, 1915)

Mineralogy

The Terranes of East Montpelier, Vermont, thesis for M.S.

H. A. CLARK, *Secretary*.

MEMBERSHIP OF SIGMA XI

Statistics for 1916-1917

Number	Chapters	Total for 1915-1916	Elected in 1916-17					Total Membership Classified				Totals 1916-17		
			Undergraduates	Graduate Students	Faculty Members	Alumni Members	Non-residents	Charter Members	Undergraduates	Graduate Students	Faculty Members	Alumni Members	Grand Total	Active Membership
1	Cornell.....	1239	45	77	6	4		13	529	586	166	77	1371	233
2	Rensselaer.....	323	18	0	0	0		7	279		15	40	341	30
3	Union.....	255	15	5	2			15	51	146	51	9	272	16
4	Kansas.....	374	8	9	3	1		5	237	63	64	26	395	67
5	Yale.....	794	22	8	4			20	471	232	103	2	828	98
6	Minnesota.....	512	1	15	8			25	295	104	112		536	142
7	Nebraska.....	374	13	9	1	1		13	133	199	44	9	398	65
8	Ohio State.....	477	26	24	2			27	268	114	85	35	529	120
9	Pennsylvania.....	714	16	5	10	3		12	434	104	152	46	748	482
10	Brown.....	243												
11	Iowa.....	276	20	8	4	7		12	166	88	49		315	78
12	Stanford.....	315	4	10	25	7	2	13	24	152	98	76	363	35
13	California.....	562	22	13	8			16	235	230	115	9	605	143
14	Columbia.....	500	24	22	2			22	211	226	56	33	548	
15	Chicago.....	524	16					62	6	435	30	7	540	173
16	Michigan.....	606												
17	Illinois.....	654	10	37	6			39	313	198	153	4	707	250
18	Case.....	241	17		1			17	142		56	44	259	27
19	Indiana.....	134		10	3	2	2	14	26	74	30	7	151	60
20	Missouri.....	252	1	24	1			23	112	85	57	1	278	96
21	Colorado.....	186						14	51	43	77	1	186	56
22	Northwestern.....	161	9	14	3			27	60	59	36	5	187	
23	Syracuse.....	142		5	4			16		59	68	8	151	61
24	Wisconsin.....	297		20	21			42		116	156	24	338	190
25	University of Wash- ington.....	140	8	8	2	0		27	34	20	8	42	158	80
26	Worcester.....	160												
27	Purdue.....	142	11	3	2			22	74	5	57		158	
28	Washington Uni- versity.....	136	6	9	4			12	60	31	54	13	170	48
29	District of Colum- bia.....	160				23		160				23	183	160
30	Texas.....	40												

The above table is as nearly correct as it can be made from the statistical reports filed with the Secretary. In many cases it has been impossible to justify the totals in various classes.

c indicates that the record has been cross checked from the card index furnished by the chapter.

r signifies that the figures are copied from the statistical blank filed by the chapter.

A blank line shows that neither means of securing data has been furnished by the chapter.

CHAPTER OFFICERS

LIST FURNISHED BY THE CORRESPONDING SECRETARIES OF THE CHAPTERS

CHAPTER	PRESIDENT	VICE-PRESIDENT	REC. SECRETARY	COR. SECRETARY	TREASURER
Cornell.....	N. H. Ogden.....	W. A. Riley.....	C. H. Berry.....	J. McMahon.....	O. A. Johannsen..
Kensselaer.....	E. D. N. Schulte..	J. B. Lincoln.....	C. H. Andros.....	E. F. Chillman...	E. F. Chillman...
Union.....	Howard Opdyke...	C. F. F. Garris...	Morland King.....	Morland King.....	Morland King.....
Kansas.....	C. H. Ashton.....	J. E. Todd.....	P. V. Farragher...	W. J. Baumgartner	F. W. Bruckmuellet
Yale.....	W. R. Longley...	C. H. Mathewson	C. O. Dunbar.....	R. H. Sattie.....	G. A. Batsell....
Minnesota.....	M. E. Haggerty...	H. Downey.....	R. M. West.....	J. G. Dietrichson.	B. L. Newkirk....
Nebraska.....	O. J. Ferguson...	Geo. Barrowman.	Margaret Hannah	N. H. Waite.....	N. A. Bengtson...
Ohio.....	Charles Sheard...	W. J. McCaughey.	C. T. Morris.....	C. T. Morris.....	F. W. Marquis...
Pennsylvania....	C. E. McClung...	H. H. Donaldson.	Stanley P. Shugert.	W. H. F. Addison	J. Percy Moore...
Brown.....	A. Def. Palmer...	A. E. Watson.....	J. A. Hall.....	P. H. Mitchell...	C. H. Currier...
Iowa.....	G. L. Houser.....	A. C. Trowbridge	Dayton Stoner...	Gilbert L. Houser	H. L. Dodge.....
Stanford.....	C. P. Tolman.....	A. W. Meyer.....	J. O. Snyder.....	J. O. Snyder.....	A. C. Alvarez...
California.....	C. B. Lipman.....	H. M. Evans.....	T. C. Burnett.....	Edmund O'Neill...	I. O. Snyder.....
Columbia.....	H. E. Hawkes...	J. K. Finch.....	W. W. Stiffer...	Wm. Campbell...	W. W. Stiffer...
Chicago.....	James R. Angell..	Forest R. Moulton	Arno V. Luckhardt.	H. A. Gleason...	Arno V. Luckhardt
Michigan.....	E. C. Case.....	A. M. Barrett...	H. A. Gleason...	James B. Shaw...	H. H. Higbie...
Illinois.....	Harry S. Grindley	L. H. Provine...	James Byrne Shaw.	James B. Shaw...	H. J. Van Cleave.
Case.....	F. H. Vose.....	D. T. Wilson.....	W. R. Veazey...	W. R. Veazey...	C. H. Hodgman...
Indiana.....	R. R. Ramsey.....	Will Scott.....	Mason E. Hufford..	Mason E. Hufford.	C. E. Edmondson.
Missouri.....	C. H. Eckles.....	D. H. Dooley...	Leroy S. Palmer...	W. C. Huntington	W. A. Tarr.....
Colorado.....	Jay W. Woodrow...	P. G. Worcester...	W. C. Huntington	W. L. Woodburn..	Junius Henderson.
Northwestern...	S. I. Korhauser..	William C. Bauer.	Lewis H. Weld.....	George T. Hargitt.	Joseph E. Pogue..
Syracuse.....	C. H. Richardson.	L. H. Pennington.	George T. Hargitt.	George T. Hargitt.	Joseph E. Pogue..
Wisconsin.....	W. J. Meek.....	E. J. Matthews...	C. I. Corp.....	C. I. Corp.....	W. B. Clark.....
Washington State	George B. Rigg...	A. L. Smith.....	H. L. Brakel.....	Effie I. Raitt....	George S. Wilson
Washington.....	R. K. Morley.....	William K. Hatt...	M. L. Hazelton...	Farrington Daniels	Morton Masius...
Purdue.....	Joseph C. Arthur..	William K. Hatt...	Nathaniel E. Loomis.	Gilbert A. Young..	William H. Bates.
Washington Univ.	A. S. Langsdorff..	G. T. Moore.....	C. H. Danforth...	M. W. Lyon, Jr..	LeRoy McMaster..
Dist. of Columbia	I. K. Phelps.....	C. L. Sheer.....	M. W. Lyon, Jr..	C. S. Yoakum....	D. R. Harper, 3rd
Texas.....	F. W. Simonds...	L. M. Lewis.....	E. L. Dodd.....	C. S. Yoakum....	S. L. Brown.....

OFFICIAL ANNOUNCEMENTS

WANTED

Extra copies of the December, 1916, number. The secretary will be indebted for any copies which may be available in the different chapters, in order to increase the meager supply in his office resulting from the misunderstanding in regard to chapter mailing lists. Please send copies to Henry B. Ward, University of Illinois, Urbana.

QUARTER CENTURY RECORD AND HISTORY

According to the instructions given by the General Convention, a copy will be sent prepaid on receipt of \$2.50.

SIGMA XI QUARTERLY

Title Page and Table of Contents for Volume I, II, III, or IV will be sent members or subscribers on request. A few extra copies of these volumes are to be had at the regular subscription price. Odd numbers will be sent members to fill gaps as long as the supply holds out.

PRINTED BLANKS

The General Convention has instructed the Secretary to keep for chapters a supply of printed blanks as enumerated below. According to instructions these are to be forwarded to chapters under the following stipulations:

Membership Certificates, stamped with the great seal of the Society. In packages of fifty prepaid, on advance payment of \$2.50 for each package.

Index Cards, on the condition that a duplicate set be sent for the general index of the Society maintained in the secretary's office. Gratis on demand.

Statistical Record Blanks, for submitting annual reports giving chapter officers, elections, and other statistical data. Gratis on demand.

Mailing Blanks, on which secretaries are requested to furnish once a year a correct list of mailing addresses of active members to be transmitted directly to the printer. Gratis on demand.

The mailing list should be sent to the General Secretary early in September and be valid for the academic year. The attention of secretaries is called to the fact that all changes of address or other correspondence concerning the QUARTERLY should be addressed to the General Secretary and not to the printing firm.

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